

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-61 are pending in the application, with 1, 27, 60, and 61 being the independent claims. Claims 1, 15, 27, 40, 60, and 61 are sought to be amended. Support for these amendments may be found in the Specification at paragraphs [0039] through [0050] of the instant application. In addition, paragraph [0023] is sought to be amended to correct a typographical error. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 112

Claims 15 and 40 have been rejected under 35 U.S.C. § 112 ¶2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Although Applicant does not necessarily agree with this rejection, Applicant has amended claims 1, 15, 27, 40 in the interest of expediting prosecution. Applicant submits that the foregoing amendments obviate the rejection of claims 15 and 40 under 35 U.S.C. § 112 ¶2, and therefore respectfully requests that this rejection be reconsidered and withdrawn.

Rejections under 35 U.S.C. § 102

Claims 1-4, 7-11, 14-16, 22-30, 34-36, 39-41, 48, 50, 52, 53, and 59-61 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Publication No. 2002/0145717 to Baselmans *et al.* ("Baselmans *et al.*"). Based on the foregoing amendments and the following remarks, Applicant respectfully traverses.

As currently amended, claim 1 recites a wavefront measurement system including:

- a source of electromagnetic radiation;
- an illumination system that directs the electromagnetic radiation uniformly at an object plane;
- a first grating adapted to be positioned in the object plane to condition the electromagnetic radiation, wherein lines of the first grating comprise a plurality of dots;
- a projection optical system that projects an image of the first grating onto a focal plane;
- a second grating at the focal plane; and
- a detector behind the second grating that receives a fringe pattern produced by the second grating.

As described in the Specification, lines of the diffraction grating may be formed from materials that reflect EUV radiation, such as compounds of metal. *See* the Specification at ¶ [0040]. The Specification goes on to explain that the lines of the grating are not continuous strips, but instead comprise a plurality of dots. *See id.*; FIG. 12. In an embodiment, the diameter of the dots is between approximately 70 nm and approximately 120 nm. *See id.* at ¶ [0042]. Thus, based on the Specification, a person skilled in the art would interpret "dots" to mean islands of metal, for example.

Baselmans *et al.* do not teach or suggest each and every feature of claim 1. For example, Baselmans *et al.* do not teach or suggest "a first grating adapted to be positioned in the object plane to condition the electromagnetic radiation, wherein lines of the first grating comprise a plurality of dots," as recited in claim 1.

Baselmans *et al.* is directed to a lithographic projection apparatus and method for measuring wave front aberrations. *See* Baselmans *et al.* at the Title. In Baselmans *et al.*, the lithographic projection apparatus comprises a grating, a pinhole, and a detector. *See* Baselmans *et al.* at ¶¶ [0026]-[0029]. The grating is described as comprising a checkerboard pattern (*see id.* at ¶ [0081]; FIG. 3B), or two one-dimensional grating patterns (*see id.* at ¶ [0083]; FIG. 3C).

In Baselmans *et al.*, neither the checkerboard pattern, nor the two one-dimensional grating patterns, are described as comprising a plurality of dots. Furthermore, the Specification and Figures of Baselmans *et al.* tend to suggest that the checkerboard pattern is comprised of two continuous regions of mutually different transmission, and that the two one-dimensional grating patterns comprise continuous lines. Consequently, Baselmans *et al.* do not teach or fairly suggest "a first grating . . . , wherein lines of the first grating comprise a plurality of dots," as recited in claim 1.

Thus, Baselmans *et al.* cannot anticipate independent claim 1. Independent claims 27, 60, and 61 also recite, among other features, a "first grating . . . , wherein lines of the first grating comprise a plurality of dots." Therefore, Baselmans *et al.* also cannot anticipate independent claims 27, 60, and 61 for at least the same reasons as set forth above with respect to claim 1, in addition to their own respective features. Dependent claims 2-4, 7-11, 14-16, and 22-26 depend from independent claim 1, and dependent claims 28-30, 34-36, 39-41, 48, 50, 52, 53, and 59 depend from independent claim 27. Consequently, Baselmans *et al.* also cannot anticipate these dependent claims. Accordingly, Applicant respectfully requests that the rejection of claims 1-4, 7-11, 14-

16, 22-30, 34-36, 39-41, 48, 50, 52, 53, and 59-61 as anticipated by Baselmans *et al.* be reconsidered and withdrawn.

Rejections under 35 U.S.C. § 103

Claims 5, 6, 13, 17-21, 31-33, 38, 42-47, 49, 51, and 54-58 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Baselmans *et al.* Based on the foregoing amendments and the following remarks, Applicant respectfully traverses.

As set forth above, Baselmans *et al.* do not teach or fairly suggest each and every feature of independent claims 1 and 27. Dependent claims 5, 6, 13, and 17-21 depend from independent claim 1 (and therefore contain each and every feature of independent claim 1), and dependent claims 31-33, 38, 42-47, 49, 51, and 54-58 depend from independent claim 27 (and therefore contain each and every feature of independent claim 27). Accordingly, these dependent claims are patentable over Baselmans *et al.* for at least the same reasons as set forth above with respect to independent claims 1 and 27, respectively, in addition to the respective features of each dependent claim. Thus, Applicant respectfully requests that the rejection of claims 5, 6, 13, 17-21, 31-33, 38, 42-47, 49, 51, and 54-58 be reconsidered and withdrawn.

Claims 12 and 37 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Baselmans *et al.* in view of U.S. Patent Publication No. 2002/0001088 to Wegmann *et al.* ("Wegmann *et al.*"). Based on the foregoing amendments and the following remarks, Applicant respectfully traverses.

As set forth above, Baselmans *et al.* does not teach or fairly suggest each and every feature of independent claims 1 and 27. The shortcomings of Baselmans *et al.* with respect to independent claims 1 and 27 are not remedied by the teachings of

Wegmann *et al.* For example, Wegmann *et al.* do not teach or fairly suggest a "first grating . . . , wherein lines of the first grating comprise a plurality of dots," as recited in each of independent claims 1 and 27. Dependent claim 12 depends from independent claim 1, and dependent claim 37 depends from independent claim 27. Accordingly, Baselmans *et al.* and Wegmann *et al.*, alone or in combination, do not teach or suggest each and every feature of claims 12 and 37. Thus, Applicant respectfully requests that the rejection of claim 12 and 37 be reconsidered and withdrawn.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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